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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/815,551	03/22/2001	Yuji Nomura	FUJH 18.479	6455

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EXAMINER

CLARK, ISAAC R

ART UNIT PAPER NUMBER

2154

DATE MAILED: 08/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/815,551

Applicant(s)

NOMURA, YUJI

Examiner

Isaac R Clark

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 03/22/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The Preliminary Amendment received on 03/22/2001 had been entered into the record.
2. Claims 1-9 are presented for examination.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file. The applicant claims a foreign priority date of 11/02/2000.
4. The effective filing date for the subject matter in the pending claims in this application is 03/22/2001.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "server" must be shown or the feature(s) canceled from the claims 6-9. No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief

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description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because of the following informalities:

- i. Page 2, lines 25-26 - the phrase "each required bandwidth is" is not grammatically correct. It is recommended that the phrase be replaced by "the respective required bandwidths are"
- ii. Page 3, line 4 – in the phrase "a fully mesh-structured paths are required" is not grammatically correct because the article "a" is singular but introduces a plural concept.
- iii. Page 5, lines 11, 12, 17, 19, 23 – there are various references to "the user site", "the user", "the other user site" and "said user site". These references are unclear because it is not possible to determine which of the plurality of user sites is being referred to in each case. It is recommended that these references be changed to "a user site of interest" and "a second user site" as appropriate.

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- iv. Page 9, line 23 – “each nodes” is not grammatically correct and should be replaced by “each node”

Appropriate correction is required.

Claim Objections

- 7. Claims 3 and 7 are objected to because of the following informalities:

In claim 7, the word “further” in line 11 is misspelled as “fuhter”.

In claim 3, lines 1-2, the phrase “to other network” is grammatically incorrect. It is recommend that the phrase be replaced by “to another network”

Appropriate correction is required.

Claim Rejections - 35 USC § 112

- 8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 9. Claims 1-9 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. The following terms lack antecedent basis:

- i. “the other site” – claim 1, line 9.
- ii. “the other user site” – claim 1, lines 14-15.
- iii. “the other user site”, claim 2, line 24.
- iv. “the user”, claim 3, page 34, line 2.
- v. “the aggregation”, claim 4, line 9.
- vi. “the other site” – claim 8, page 35, line 26.

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vii. "the other user site" – claim 8, page 36, line 4.

b. The claim language in the following claims is murky or not clearly understood:

i. the antecedent to "said network" in claim 1, line 12 is unclear because separate networks are referred to in line 2 and line 6.

ii. the antecedent to "said user site" in claim 3, page 34, line 4 is unclear because separate a plurality of user sites are referred to in claim 1, line 5

iii. the antecedent to "said user site" in claim 4, line 8 is unclear because separate a plurality of user sites are referred to in claim 1, line 5.

iv. the antecedent to "said network" in claim 8, page 36, line 1 is unclear because separate networks are referred to on page 35, lines 21 and 23.

12. Claims 5-7, and 9 are rejected because of their dependencies.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. For the purposes of examining the claims references to "the user site", "said user site", and "the user site of interest" are interpreted to mean a first user site of interest

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among the plurality of user sites, while references to "the other site" and "the other user site" are interpreted to mean a second user site among the plurality of user sites.

15. Claims 1-3, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeshima et al. (US 6,092,113) in view of Vaid et al. (US 6,078,953) hereinafter Vaid.

16. As per claim 1, Maeshima teaches a method for allocating an aggregation bandwidth in a network system including an inter-site connection network which has a plurality of nodes respectively having packet switches (Fig. 1, items 300A, 300B, and 300C), and a plurality of user sites (Fig. 1, items 200A, 200B, 200C) respectively which has a host or a network connected to said plurality of nodes through access lines, the method comprising the steps of:

calculating a necessary and sufficient bandwidth for interconnecting said user site of interest to the other user site (col. 3, lines 48-62); and

allocating a bandwidth to said plurality of nodes based on said calculated bandwidth (col. 5, lines 31-39).

17. Maeshima fails to explicitly teach when a user site of interest among said plurality of user sites is to be connected to the other site through said inter-site connection network, determining a bandwidth of an access line connecting said user site of interest to said network as a minimum bandwidth.

18. Vaid teaches when a user site of interest among said plurality of user sites is to be connected to the other site through said inter-site connection network, determining a

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bandwidth of an access line connecting said user site of interest to said network as a minimum bandwidth (col. 4, lines 10-12).

19. It would have been obvious to one of ordinary skill in this art at the time the invention was made to combine the teaching of Maeshima and Vaid to determine a bandwidth of an access line connecting said user site of interest to said network as a minimum bandwidth because they both deal with reserving aggregate bandwidth in a communications network. Furthermore, the teaching of Vaid that throughput is typically limited by the speed of the Internet access links would result in reserving bandwidth allowing the user site to communicate at its maximum possible capacity without reserving additionally bandwidth on the network that would not be used by the user site.

20. As per claim 2, Maeshima fails to teach the method for allocating network aggregation bandwidth according to claim 1, wherein, among paths for interconnecting said plurality of user sites, if a plurality of paths possible to aggregate exist, paths are aggregated with respect to a user site having an allocatable bandwidth smaller than the other user site.

21. Vaid teaches that the throughput of a path is limited by the smaller of the access links at either end of a path (col. 2, lines 27-32).

22. It would have been obvious to one of ordinary skill in this art at the time the invention was made to combine the teaching of Maeshima and Vaid to allocate network aggregation bandwidth by aggregating paths with respect to a user site having an allocatable bandwidth smaller than the other user site. Furthermore aggregating bandwidth with based on the lowest bandwidth of the involved the user sites would

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prevent allocating more bandwidth than could be used for the connection between the two sites (Vaid, col. 2, lines 28-34).

23. As per claim 3, Maeshima fails to teaches the method for allocating network aggregation bandwidth according to claim 1, wherein, when a virtual site having a host or a gateway to other network used by the user is connected to said inter-site connection network, bandwidth allocation is set based on said virtual site regarded as the user site.

24. Vaid teaches to teaches the method for allocating network aggregation bandwidth according to claim 1, wherein, when a virtual site having a host or a gateway to another network used by the user is connected to said inter-site connection network, bandwidth allocation is set based on said virtual site regarded as the user site (col. 4 lines 7-10; for hosts, endpoints and gateways, bandwidth is limited by access link speed).

25. It would have been obvious to one of ordinary skill in this art at the time the invention was made to combine the teaching of Maeshima and Vaid to treat a virtual site having a host or a gateway to another network used by the user is connected to said inter-site connection network as a user site for setting the bandwidth allocation because they both deal with reserving aggregate bandwidth in a communications network. Furthermore to treat a virtual site as a user site would allow allocating bandwidth based on the minimum bandwidth needed to connect to the access line of the virtual site.

26. As per claim 8, claim 8 is an apparatus claim with the same subject matter as claim 1. Claim 8 is rejected for the same reasons as claim 1.

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27. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maeshima in view of Vaid further in view of Packer et al. (US 6,456,630) hereinafter Packer.

28. Maeshima fails to teach the method for allocating network aggregation bandwidth according to claim 1 wherein, when an access line bandwidth is changed to make an aggregation bandwidth different from either the destination or originating bandwidth, or produce inverted interrelation in the bandwidth size between said destination bandwidth and said originating bandwidth, an aggregation path and an aggregation bandwidth are newly obtained.

29. Vaid teaches that the throughput of a path is limited by the smaller of the access links at either end of a path (col. 2, lines 27-32).

30. Packer teaches reallocating the aggregated bandwidth when the bandwidth of the access links is changed (col. 11 line 59 through col. 12 line 16).

31. It would have been obvious to one of ordinary skill in this art at the time the invention was made to combine the teaching of Maeshima, Vaid, and Packer to recalculate the aggregation path and the allocation bandwidth when an access line bandwidth is changed to make an aggregation bandwidth different from either the destination or originating bandwidth because each reference deals with the allocation of bandwidth in a network. Furthermore recalculating only when the new access link bandwidth changes the relationship between destination and origination bandwidth such that it reverses the determination of which of the two bandwidths is greater eliminates

the need to perform complex bandwidth weighting calculations unnecessarily (Maeshima col. 3 lines 53-63).

32. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeshima in view of Vaid further in view of Doshi et al (US 6,529,499) hereinafter Doshi.

33. As per claim 9, Maeshima fails to teach the network system according to claim 8, further comprising: a server, which is provided in said inter-site connection network, for calculating the aggregation path and the aggregation bandwidth, and for when bandwidth resource possible to reserve exists in said inter-site connection network, transmitting to each transit node an indication information of an aggregation path included in a bandwidth allocation message to be transmitted in forward or backward direction.

34. Doshi teaches the network system according to claim 8, further comprising: a server 230 (Fig. 1), which is provided in said inter-site connection network, for calculating the aggregation path and the aggregation bandwidth (col. 6, lines 52-64), and for when bandwidth resource possible to reserve exists in said inter-site connection network, transmitting to each transit node an indication information of an aggregation path included in a bandwidth allocation message to be transmitted in forward or backward direction (col. 6, lines 64-67; col. 7, lines 1-13; Fig. 1).

35. It would have been obvious to one of ordinary skill in this art at the time the invention was made to combine the teaching of Maeshima and Doshi to provide a server because they both deal with the allocation and management of aggregated

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bandwidth in a network. Furthermore, the teaching of Doshi to provide a server to transmit to each transit node an indication information of an aggregation path included in a bandwidth allocation message to be transmitted in forward or backward direction allows setting aggregation policy without the need to directly signal individual routers over which the network path is established (Doshi, col. 2, lines 5-9; col. 5, lines 33-39).

36. As per claim 6, claim 6 is a method claim covering the same subject matter as claim 9. Claim 6 is rejected on the same basis as claim 9.

37. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maeshima in view of Vaid further in view of Doshi, further in view of Multiprotocol Label Switching Architecture (Internet Draft), by Rosen, Viswanathan, and Callon hereinafter MPLS.

38. Maeshima fails to teach the method for allocating network aggregation bandwidth according to claim 6, further comprising the step of: in the server, specifying a transit node or transit nodes through which said bandwidth allocation message is transferred.

39. MPLS teaches specifying the transit node through which the nodes through which the bandwidth allocation message is transferred (Paragraph 3.21; in explicit routing scheme either ingress or egress may specify the remaining nodes in the path)

40. It would have been obvious to one of ordinary skill in this art at the time the invention was made to combine the teaching of Maeshima and MPLS to specify a transit node or transit nodes through which said bandwidth allocation message is transferred because they both deal with aggregation of network traffic. Furthermore, the teaching of MPLS to select a node for routing the bandwidth allocation method would

allow selecting a node that would provide an allocation of routing labels reducing the traffic between nodes (MPLS, paragraph 3.21).

Allowable Subject Matter

41. Claim 4 is objected to as being dependent upon a rejected base claim, would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims addressing the rejection(s) under 35 USC § 112, second paragraph set forth in this office action.

42. The following is a statement of reasons for the indication of allowable subject matter:

43. While Maeshima in view of Vaid teaches the method of allocating network aggregation bandwidth described in claim 1, Maeshima fails to teach that when a user site becomes non existent, a path related thereto is deleted, and whether the aggregation for other paths having the same aggregation path ID as said deleted path has been constructed at the destination site or the originating site is investigated; and if the aggregation has not been constructed, a new aggregation relation is established among paths having either the same destination site or the same originating site; else if the aggregation has been constructed at either the destination site or originating site having a larger site bandwidth, then the existing aggregation relation is canceled to obtain a new aggregation bandwidth based on a site having a smaller bandwidth. No reasonable combination of the prior art references of record could be made with Maeshima to arrive at the limitations of claim 4 absent impermissible hindsight

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reconstruction. As such claim 4 is believed to patentably distinguish over the prior art of record.

Conclusion

44. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents and publications are cited to further show the state of the art with respect to "Method for allocating network allocation bandwidth and a network system for using the same".

- i. US 6,628,670 Galand et al.
- ii. US 20030219030 Gubbi
- iii. US 6,466,979 Plouffe, Jr.
- iv. Resource allocation for elastic traffic: architecture and mechanisms. Wang, Z.; Basu, A.; Network Operations and Management Symposium, 2000. NOMS 2000. 2000 IEEE/IFIP, 10-14 April 2000 Pages 157-170.
- v. Dynamic Routing of Locally Restorable Bandwidth Guaranteed Tunnels using Aggregated Link Usage Information. Kodialam, M. and Lakshaman, 20th Annual Joint Conference of the IEEE Computer and Communications Societies. Proceedings. IEEE, Vol. 1. Pgs 376-385.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isaac R Clark whose telephone number is (703)605-1237. The examiner can normally be reached on Monday-Friday 8:00am-4:30pm.

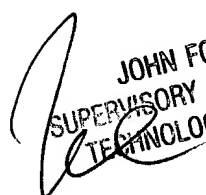
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A Follansbee can be reached on (703)305-8498. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

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Irc

 JOHN FOLLANSBEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100